INTERNATIONAL SEARCH REPORT

International application No.
PCT/US05/00955

A. CLASSIFICATION OF SUBJECT MATTER
IPC(7) : G01N 33/53; A61K 39/00; C07K 16/00
US CL : 435/7.2, 975; 424/184.1, 269.1, 530/388.6, 822, 403,
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 435/7.2, 975; 424/184.1, 269.1, 530/388.6, 822, 403,

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
PubMed, EAST, STIC sequence search

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	Szu-Ting Ng et al Comparative EST analysis provide insights into gene expression in two asexual developmental stages of Eimeria tenella Experimental Parasitology 101 (2002) 168-173	1-6, 12-23
Y	Liberator et al EST sequence deposited under accession no. CD345641.1	1-6, 12-23

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
29 October 2005 (29.10.2005)	14 MAR 2006
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer Achutamurthy Poonamapura Telephone No. 571-272-1600

Form PCT/ISA/210 (second sheet) (April 2005)

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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
Please See Continuation Sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of any additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-6 and 12-23

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

☐ No protest accompanied the payment of additional search fees.

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BOX III. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

Group I- Claims 1-6 and (12-23 in part) are drawn to purified nucleic acid of SEQ ID NO: 1 encoding a polypeptide of SEQ ID NO: 2, expression vectors, recombinant host cells and a process of expressing an *E. tenella* coccidian casein kinase I (CKI) in a recombinant host cell.

Group II- Claims 7-11 and (12-23 in part) are drawn to purified nucleic acid of SEQ ID NO: 3 encoding a polypeptide of SEQ ID NO: 4, expression vectors, recombinant host cells and a process of expressing an *Toxolasma gondii* coccidian casein kinase I (CKI) in a recombinant host cell.

Group III- Claims 7-11 and (12-23 in part) are drawn to purified nucleic acid of SEQ ID NO: 5 encoding a polypeptide of SEQ ID NO: 6, expression vectors, recombinant host cells and a process of expressing an Toxolasma gondii coccidian casein kinase I (CKI) in a recombinant host cell.

Group IV- Claims 24-27 and (31-34 in part) are drawn to an *E. tenella* CKI protein of SEQ ID NO: 2 substantially pure from other proteins.

Group V- Claims 28-30 and (31-34 in part) are drawn to a *Toxolasma gondii* CKI protein of SEQ ID NO: 4 substantially pure from other proteins.

Group VI- Claims 28-30 and (31-34 in part) are drawn to a Toxolasma gondii CKI protein of SEQ ID NO: 6 substantially pure from other proteins

Group VII- Claim (35 in part) and claim 36 are drawn to a method of identifying a test compound which modulates coccidian CKI protein of SEQ ID NO: 2 from *Eimeria* genus.

Group VIII- Claim (35 in part) and claim 37 are drawn to a method of identifying a test compound which modulates coccidian CKI protein of SEQ ID NO: 4 from *Toxolasma* genus.

Group IX- Claim (35 in part) and claim 37 are drawn to a method of identifying a test compound which modulates coccidian CKI protein of SEQ ID NO: 6 from Toxolasma genus.

1. This International Searching Authority considers that the international application does not comply with the requirements of unity of invention(Rules 13.1, 13.2 and 13.3) for the reasons indicated below:

Although the nucleic acid of group I, group II and group III encode CKI proteins these proteins have different structures and/or different source and require different searches are therefore distinct one from the other. Groups IV-VI comprising the proteins of SEQ ID NO: 2, 4 and 6 have different structures and/or originate from different sources therefore are distinct one from the other. Likewise the methods of identifying a compound which modulates a CKI (SEQ ID NO: 2) from Eimeria genus is distinct from a method of identifying a compound that modulates CKI (SEQ ID NO: 4) or a method of identifying a compound that modulates CKI (SEQ ID NO: 6) from Toxoplasma.

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The polynucleotides of groups I-III and the polypeptides of groups IV-VI are distinct by virtue of having distinct structures. The method of identifying a modulator of particular CKI polypeptides is distinct from a polynucleotides or polypeptides which could be used as hybridization probes or to raise antibodies.